**SAI Pre-College Math:**

**Preliminary Analyses for Rethinking Precollege Math (RPM) Project**

(Analyses conducted by Ann Paulson, July 2010)

Describe Structure of PreCollege Math Classes

Notes: The numbers stayed surprisingly similar. The increase in colleges with level 1 courses was from 50-53%. In average courses per level, the only significant change is also in level 1, with the average moving from 1.2 to 1.6 per school. The courses with grade qualifiers stayed similar, with level 1 decreasing from 83% to 80% of courses.

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| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | |  |  |  |  |
| **Number of Levels** |  |  | |  | **Prior Number of Levels** |  |  |
| 3 Levels\* | 47% |  | |  | 3 Levels\* | 50% |  |
| 4 Levels | 53% |  | |  | 4 Levels | 50% |  |
|  |  |  | |  |  |  |  |
| \*3 colleges skip level 2 | | | |  |  |  |  |
|  |  | |  |  |  |  |  |
| **Average Courses Per Level** |  | |  |  | **Prior Average Courses Per Level** |  |  |
| Level 1 | 1.6 | |  |  | Level 1 | 1.2 |  |
| Level 2 | 1.7 | |  |  | Level 2 | 1.6 |  |
| Level 3 | 2.2 | |  |  | Level 3 | 2.1 |  |
| Level 4 | 1.8 | |  |  | Level 4 | 1.8 |  |
|  |  | |  |  |  |  |  |
|  |  | |  |  |  |  |  |
| **Courses with Grade Qualifiers** |  | |  |  | **Prior Courses with Grade Qualifiers** |  |  |
| Level | Percent | | Average Grade |  | Level | Percent | Average Grade |
| Level 1 | 80% | | 1.93 |  | Level 1 | 83% | 1.96 |
| Level 2 | 92% | | 1.96 |  | Level 2 | 94% | 1.97 |
| Level 3 | 93% | | 1.99 |  | Level 3 | 92% | 1.99 |
| Level 4 | 89% | | 1.96 |  | Level 4 | 88% | 1.97 |

Description of Students who Attempt Pre-College Math

1. Describe students who attempt pre-college math.
   1. How many total students attempted pre-college math courses in A67, A78 and A89?
   2. Disaggregate total pre-college math students by age group, gender, race/ethnicity, enrollment status (full or part-time) and student purpose (workforce, transfer or basic skills) showing change between A67 and A89.
   3. Between 2006-07 and 08-09 what percentage of students also enrolled in basic skills?
   4. For students who started in A89, what percentage started at each pre-college level, 1, 2, 3, 4?
   5. For students who started in A89, what percentage attempted pre-college math with no prior college? Some prior college? Earned a previous quant point?

**Study Question 2A: How many total students attempted pre-college math courses in A67, A78 and A89?**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Students Attempting Pre-College Math** | | | | | | | |
| **College Name** | **Total** | **A67** | **A78** | **A89** | **Change A67 to A78** | **Change A78 to A89** | **Change A67 to A89** |
| **Big Bend** | 1574 | 313 | 501 | 575 | 60% | 15% | 84% |
| **Cascadia** | 1895 | 433 | 587 | 743 | 36% | 27% | 72% |
| **Clark** | 5208 | 963 | 1560 | 1993 | 62% | 28% | 107% |
| **Everett** | 3847 | 837 | 1193 | 1405 | 43% | 18% | 68% |
| **Highline** | 3400 | 693 | 1080 | 1291 | 56% | 20% | 86% |
| **Lower Columbia** | 2069 | 453 | 601 | 762 | 33% | 27% | 68% |
| **Pierce Fort Steilacoom** | 2939 | 739 | 864 | 1097 | 17% | 27% | 48% |
| **Pierce Puyallup** | 1954 | 443 | 599 | 754 | 35% | 26% | 70% |
| **Seattle Central** | 3069 | 622 | 909 | 1198 | 46% | 32% | 93% |
| **Seattle North** | 1851 | 421 | 548 | 716 | 30% | 31% | 70% |
| **Spokane Falls** | 7465 | 1608 | 2377 | 2758 | 48% | 16% | 72% |
| **Yakima Valley** | 2548 | 512 | 787 | 958 | 54% | 22% | 87% |
|  | 92622 | 19701 | 29004 | 34705 | 47% | 20% | 76% |

**Study Question 2D: For students who started in A89, what percentage started at each pre-college level, 1, 2, 3, 4?**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Students *Starting* Pre-College Math in A89  by First Level Attempted** | | | | | |
| **College Name** | **Total** | **Start Level 1** | **Start Level 2** | **Start Level 3** | **Start Level 4** |
| Big Bend | 522 | 15% | 38% | 30% | 16% |
| Cascadia | 696 | 0% | 17% | 24% | 60% |
| Clark | 1661 | 35% | 15% | 32% | 18% |
| Everett | 1227 | 28% | 20% | 31% | 22% |
| Highline | 1128 | 0% | 40% | 28% | 32% |
| Lower Columbia | 667 | 25% | 24% | 39% | 11% |
| Pierce Fort Steilacoom | 975 | 21% | 0% | 44% | 35% |
| Pierce Puyallup | 667 | 24% | 0% | 48% | 28% |
| Seattle Central | 1044 | 20% | 41% | 15% | 23% |
| Seattle North | 645 | 35% | 12% | 35% | 19% |
| Spokane Falls | 2465 | 11% | 39% | 13% | 37% |
| Yakima Valley | 830 | 24% | 21% | 38% | 16% |
|  | 30514 | 14% | 27% | 33% | 26% |

**Study Question 2E: For students who started in A89, what percentage attempted pre-college math with no prior college? Some prior college? Earned a previous quant point?**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Students *Starting* Pre-College Math in A89  by Prior College Category** | | | | |
| **College Name** | **Total** | **No Prior College** | **Some Prior College** | **Prior Quant Point** |
| Big Bend | 522 | 68% | 22% | 10% |
| Cascadia | 696 | 73% | 27% | 1% |
| Clark | 1661 | 70% | 27% | 3% |
| Everett | 1227 | 67% | 29% | 4% |
| Highline | 1128 | 62% | 34% | 5% |
| Lower Columbia | 667 | 68% | 28% | 4% |
| Pierce Fort Steil. | 975 | 64% | 33% | 3% |
| Pierce Puyallup | 667 | 71% | 28% | 1% |
| Seattle Central | 1044 | 62% | 35% | 3% |
| Seattle North | 645 | 62% | 35% | 2% |
| Spokane Falls | 2465 | 70% | 26% | 4% |
| Yakima Valley | 830 | 65% | 32% | 4% |
|  | 30514 | 66% | 30% | 4% |

SAI Student Progress in Dev Math

**Study Question 3: Measure progress of pre-college students through pre-college classes.**

**Question 3A: What is the total of pre-college math achievement points earned?**

**Question 3B: How many students earned a point, both as a sum and as a percentage of students taking pre-college math classes?**

**Question 3C: How many points are earned, on average, by each student earning at least one math point?**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Students Earning Pre-College Math Points A89 Compared to A67** | | | | | | | |
| **College Name** | **Students Earning Points A89** | **Change since A67** | **% of Students Earning Point 89** | **Percentage Point Change Since 67** | **Sum of Points 89** | **Average Points Per Student A89** | **Average Points Change Since 67** |
| Big Bend | 361 | 51% | 63% | 4% | 462 | 1.28 | -0.03 |
| Cascadia | 540 | 34% | 73% | 2% | 661 | 1.22 | -0.08 |
| Clark | 1665 | 41% | 84% | 2% | 2425 | 1.46 | -0.04 |
| Everett | 942 | 22% | 67% | 3% | 1272 | 1.35 | -0.08 |
| Highline | 873 | 47% | 68% | 1% | 1123 | 1.29 | 0.00 |
| Lower Columbia | 513 | 20% | 67% | 0% | 726 | 1.42 | 0.02 |
| Pierce Fort Steil. | 700 | 12% | 64% | -2% | 859 | 1.23 | -0.06 |
| Pierce Puyallup | 522 | 28% | 69% | 0% | 687 | 1.32 | -0.01 |
| Seattle Central | 864 | 41% | 72% | 5% | 1207 | 1.40 | -0.07 |
| Seattle North | 493 | 31% | 69% | 4% | 665 | 1.35 | -0.03 |
| Spokane Falls | 1699 | 51% | 62% | 15% | 2228 | 1.31 | -0.19 |
| Tacoma | 1084 | 54% | 76% | 10% | 1306 | 1.20 | -0.09 |
| Yakima Valley | 716 | 27% | 75% | 2% | 996 | 1.39 | -0.13 |
|  | 24434 | 32% | 70% | 1% | 32215 | 1.32 | -0.05 |

**Study Question 3D: Of students who started in Fall of A67, what was their highest achievement point reached by Spring of A89?**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Start Fall 2006, No prior College, Highest Momentum Achieved through Spring 2009** | | | | | | | | |
| **College Name** | **Total Group** | **Tipping Point** | **Quant Course** | **30 Credits** | **15 Credits** | **College Ready Point** | **Basic Skills Gain** | **No Momen-tum** |
| Big Bend | 221 | 22% | 31% | 17% | 18% | 8% | 0% | 5% |
| Cascadia | 280 | 22% | 33% | 15% | 13% | 7% | 0% | 10% |
| Clark | 719 | 12% | 26% | 21% | 13% | 20% | 0% | 8% |
| Everett | 574 | 12% | 23% | 29% | 14% | 11% | 0% | 10% |
| Highline | 561 | 17% | 28% | 28% | 9% | 11% | 0% | 7% |
| Lower Columbia | 301 | 26% | 17% | 20% | 10% | 13% | 0% | 13% |
| Pierce Fort Steilacoom | 442 | 12% | 25% | 22% | 16% | 14% | 0% | 11% |
| Pierce Puyallup | 258 | 10% | 31% | 23% | 18% | 9% | 0% | 9% |
| Seattle Central | 379 | 17% | 26% | 22% | 13% | 11% | 0% | 11% |
| Seattle North | 269 | 14% | 27% | 14% | 17% | 13% | 0% | 14% |
| Spokane Falls | 1062 | 16% | 21% | 24% | 13% | 6% | 0% | 19% |
| Yakima Valley | 380 | 18% | 23% | 24% | 13% | 16% | 0% | 6% |
|  | 13410 | 18% | 25% | 23% | 13% | 11% | 0% | 10% |

**Study Question 3E: To what extent do the colleges that had the biggest increase between A67 and A89 also have higher than average courses in each level, or do or don’t assign grade qualifiers?**

Notes: Both Clark and Whatcom are at the top of the list for highest average points per student. Clark appears to have no grade qualifiers for any precollege math classes. Whatcom has qualifiers for 3 of 5 classes.

|  |  |  |
| --- | --- | --- |
| Courses with no grade qualifiers | Prior | Current |
| Bellingham | 3 | 4 |
| Centralia | 3 | 3 |
| Clark | 6 | 6 |
| Grays Harbor | 1 | 1 |
| Lake Washington | 3 | 3 |
| Seattle South | 1 | 2 |
| South Puget Sound | 1 | 1 |
| Tacoma | 1 | 0 |
| Whatcom | 1 | 2 |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Courses by Level Compared to "Prior" Courses by Level** | | | | | | | | | | |
| **College Name** | **Total Classes** | **Change** | **Level 1** | **Change** | **Level 2** | **Change** | **Level 3** | **Change** | **Level 4** | **Change** |
| Big Bend | 8 | 1 | 2 | 1 | 1 | 0 | 3 | 0 | 2 | 0 |
| Centralia | 3 | 0 |  | 0 | 1 | 0 | 1 | 0 | 1 | 0 |
| Clark | 6 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 2 | 0 |
| Everett | 7 | -7 | 1 | -1 | 2 | -2 | 3 | -3 | 1 | -1 |
| Highline | 10 | 4 | 2 | 2 | 3 | 1 | 2 | 0 | 3 | 1 |
| Lower Columbia | 6 | 2 | 2 | 1 | 2 | 1 | 1 | 0 | 1 | 0 |
| Pierce Fort Steilacoom | 7 | 1 | 2 | 1 |  | 0 | 3 | 0 | 2 | 0 |
| Pierce Puyallup | 7 | 1 | 2 | 1 |  | 0 | 3 | 0 | 2 | 0 |
| Seattle Central | 13 | 0 | 1 | 0 | 4 | 0 | 4 | 0 | 4 | 0 |
| Seattle North | 9 | 0 | 1 | 0 | 2 | 0 | 4 | 0 | 2 | 0 |
| Spokane Falls | 11 | 3 | 1 | 0 | 3 | 1 | 4 | 1 | 3 | 1 |
| Yakima Valley | 6 | 0 | 1 | 0 | 2 | 0 | 1 | 0 | 2 | 0 |
|  | 219 | 15 | 30 | 6 | 53 | 4 | 74 | 3 | 62 | 2 |

**Study Question 3F: Disaggregate percentage of pre-college math students earning points by age group, gender, race/ethnicity, enrollment status (full or part-time) and student purpose (workforce, transfer or basic skills) showing change between A67 and A89.**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Students Earning Points A89 by Race/Ethnicity as a Percentage of Students**  **in Each Category Taking Pre-College Math** | | | | | | | | |
| **College Name** | **Total Math Students** | **Earning Points** | **Asian/ Pacific Islander** | **African American** | **Native American** | **Latino** | **Other Multiracial** | **White** |
| Big Bend | 575 | 63% | 69% | 67% | 42% | 64% | 67% | 62% |
| Cascadia | 743 | 73% | 79% | 80% | 67% | 78% | 68% | 71% |
| Clark | 1993 | 84% | 86% | 72% | 83% | 85% | 80% | 84% |
| Everett | 1405 | 67% | 71% | 61% | 50% | 56% | 61% | 68% |
| Highline | 1291 | 68% | 70% | 52% | 57% | 64% | 68% | 73% |
| Lower Columbia | 762 | 67% | 80% | 45% | 82% | 64% | 70% | 68% |
| Pierce Fort Steil. | 1097 | 64% | 61% | 57% | 63% | 65% | 59% | 67% |
| Pierce Puyallup | 754 | 69% | 78% | 41% | 63% | 72% | 69% | 70% |
| Seattle Central | 1198 | 72% | 72% | 58% | 52% | 68% | 72% | 78% |
| Seattle North | 716 | 69% | 62% | 55% | 58% | 71% | 65% | 73% |
| Spokane Falls | 2758 | 62% | 65% | 48% | 44% | 56% | 47% | 64% |
| Yakima Valley | 958 | 75% | 83% | 62% | 76% | 73% | 61% | 77% |
|  | 34705 | 70% | 71% | 58% | 62% | 68% | 67% | 72% |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Students Earning Points A89 by Purpose as a**  **Percentage of Students in Each Category Taking Pre-College Math** | | | | | |
| **College Name** | **Total Math Students** | **Earning Points** | **Basic Skills** | **Transfer** | **Workforce** |
| Big Bend | 575 | 63% | 89% | 61% | 68% |
| Cascadia | 743 | 73% | 72% | 73% | 73% |
| Clark | 1993 | 84% | 67% | 84% | 82% |
| Everett | 1405 | 67% | 55% | 66% | 71% |
| Highline | 1291 | 68% | 72% | 68% | 66% |
| Lower Columbia | 762 | 67% | 57% | 71% | 65% |
| Pierce Fort Steilacoom | 1097 | 64% | 100% | 63% | 67% |
| Pierce Puyallup | 754 | 69% | 88% | 68% | 75% |
| Seattle Central | 1198 | 72% | 56% | 73% | 72% |
| Seattle North | 716 | 69% | 50% | 69% | 73% |
| Spokane Falls | 2758 | 62% | 53% | 62% | 59% |
| Yakima Valley | 958 | 75% | 74% | 76% | 71% |
|  | 34705 | 70% | 58% | 71% | 72% |